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GROWING THE FALL OR SECOND CROP OF POTATOES IN CALIFORNIA

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It is possible and profitable, over a large portion of California, to grow a second or fall crop of potatoes, and this practice should be encouraged where conditions are favorable, for practical experience has shown that a heavier yield of better quality is realized than in the case of early spring potatoes.

It is difficult to store potatoes successfully during the warmer months, but those maturing in the fall may be kept in a satisfactory condition until the following spring, which is often an advantage to the grower. As a rule, higher prices prevail during the winter and spring than are offered in the summer; this coupled with the larger yields obtained, appears to be very encouraging for the future production of fall potatoes.

It is imperative, however, that the soil be adapted to the needs of this crop, and that sufficient irrigation facilities be available so that the water may be applied when needed. The absence of heavy frosts up to the middle of November is also an important condition.

How to Obtain Seed.—The seed may be obtained from the potatoes stored over winter, or from the spring crop of the same year. Under ordinary conditions the latter source of seed is preferable.

Growing Seed for Second Crop.—When home-grown seed is used, the crop should be planted as soon in the spring as possible, the exact time depending largely upon the climatic conditions. Under central California conditions the seeding may be done during February and March, but in the warmer sections it is possible to advance the time of planting considerably. In the vicinity of Sacramento, the planting is done from February 1 to March 15.

If an early maturing variety, such as the American Wonder, is used, the crop may be dug during the latter part of June to the first week in July. When using this crop for seed, experience has shown that it should be harvested before full maturity. The most desirable time to harvest is when the vines are changing from a yellow to a brownish color.

Harvesting and Curing the Seed.—If the crop is harvested at the period shown above, the potatoes will not be fully matured and the skin will slip very easily. After digging they should be exposed to the sun from one-half to one hour before being picked up. If the day is very hot, care should be taken not to allow them to be on the ground too long, as they will sunburn very easily and become unfit for food, storage, or seed.

After the crop has been exposed to the sun the desirable length of time, the seed should be placed immediately in piles from two to four feet high and covered with straw to a depth of from six inches to one foot. These heaps, or stacks, should be sprinkled each day or so, putting on enough water to soak into them thoroughly, but being careful that no excess moisture is allowed to accumulate, for fear of rotting the potatoes. The water may be applied through the straw.

If there is no danger of tuber-moth infestation, these piles may be made under a tree or shade where they will be protected from the heat, or at least partially shaded. Where this pest is troublesome, it is best to store the potatoes in a building where the moth can not gain entrance, or cover the piles each night with canvas.

The length of time the potatoes should remain in these piles is somewhat dependent upon the condition of the tubers, climate and season, but generally from one to two weeks is sufficient. After being removed they should be dipped, cut and planted as soon as possible, for the longer they are exposed, the weaker will be their germination power.

The selection of seed potatoes should be made at the time of harvesting, and it is best to dig a certain portion of the crop by hand, keeping the individual hills separated, and to select from these the potatoes best suited for future propagation. If this method is pursued, the condition of the hill, as a whole, should be noted and not the individual potato. If the grower does not wish to use the hill selection, he should at least save only those potatoes which conform closely to the ideal of the type and variety; a medium sized potato, free from disease, will be found more advantageous than the very small or large tubers.

The proper selection of the seed is of extreme importance; where this is carried on carefully and thoroughly, it will pay the grower to select his own seed from one season to another. At the University Farm vegetable garden, home-grown, selected potatoes have been used for four years and the quality of the eight crops produced has improved regularly. Should home-grown seed be used continually, without proper regard to selection, it is probable that the quality would soon deteriorate to a degree where new seed would have to be imported.

Preparation of the Soil.—It is sometimes difficult to obtain a satisfactory stand of potatoes when planting during very hot weather. This is due to poor curing of the seed and especially to an unfavorable condition of the soil. In preparing the field for planting the great problem is to cool the soil sufficiently so that the seed will not be burned. Following is the method commonly used by many of the

market gardeners and at the University Farm, and appears to be entirely satisfactory for the interior valleys and warmer sections of the state.

From one week to ten days before planting, the exact time depending largely upon the character of the soil, the field should be irrigated very heavily, so that the soil is thoroughly saturated. A second irrigation is given from two to four days before planting and as the chief advantage of this irrigation is to cool the soil, a small amount of water is used. Where possible, the land should be flooded rather than applying the water in furrows. It is not customary to work the land between irrigations.

Planting.—Just previous to planting, the potatoes should be immersed from one and one-half to two hours in a corrosive-sublimate solution of a strength of one ounce of the material to eight gallons of water. Extreme care should be exercised in handling this dip, as it is very poisonous. A wooden receptacle, such as a barrel, should be used for this purpose.

As soon as the soil is in proper condition, the field is plowed to a depth of eight to twelve inches and the potatoes immediately planted. In planting large areas, better success will be attained if the field is worked in small tracts, planting as soon as possible after plowing. The seed should be put in the ground at least five inches deep, preferably six or seven inches, in order to protect it as much as possible from the heat and to prevent drying. Heavier seeding should be practiced in planting at this season than is customary when seeding under more congenial growing conditions. At least eight sacks of medium sized potatoes per acre should be used.

The time of planting is governed by the locality and time at which the first crop is in condition to be dug. For the central interior valleys the planting season extends from July 7 to August 1. In the southern part of the state the planting may be done from July 1 to August 10. Many potatoes are planted after the dates given above, but this is done at a considerable risk, owing to the liability of early frosts which may kill the plants before they are mature, resulting in a partial or total loss of the crop.

In many of the hot interior valleys, the potatoes maturing in June and July are often internally discolored. This condition is known as the Internal Brown Streak, and is not transmitted through the seed, so that the affected tubers may be used for this purpose. The grower, however, should not confuse this condition with several of the parasitic diseases which discolor the potato, making it absolutely unfit for seed. Should any doubt exist, a sample may be submitted to the University of California, College of Agriculture.

Future Care of Crop.—The future care differs only slightly from the methods used for growing the spring crop. After planting, the field should be harrowed at least once a week until the plants appear, for every effort must be made to keep as much moisture as possible in the soil, since it is unwise to irrigate before a month to six weeks after planting and the loss of moisture during the heat of the summer is very rapid. As soon as the plants are four to eight inches high,

the field should be irrigated and a second irrigation is given about the time the plants are in full bloom. It is often desirable to apply the water a third time, viz., before the vines start to mature.

Harvesting.—When an early or medium-early variety is used, the crop may be harvested in November. Should it be desirable to store the potatoes, they should not be dug until the vines have been killed by frost, for in order that the crop may be held successfully, it should be thoroughly matured. Should rain come before the crop is harvested, the tubers will not be injured, provided the soil drainage is such that the water will not stand on the field. During periods in which frosts are likely to appear, the potatoes should not be left exposed over night. It is best to leave them on the ground from two to four hours before sacking, in order that they may dry; this will also help to mature them properly.

Storing.—There are several methods for storing during the winter. Some leave the crop in piles in the field, protected from frost by straw or sacks. This method is only used where the soil is of a sandy nature so that no excess water will accumulate. The most common practice for keeping potatoes in California over winter is to put them in sacks and store in a weather-proof building. This should be well ventilated, rain-proof, and as dark as possible. During warm days the house should be closed and opened during the nights, provided the temperature is not too severe.

The third method is storing the potatoes in crates, placed in a suitable building. Even under good storage conditions, losses are sometimes sustained; in order to store potatoes in a satisfactory manner, they must be fully matured when dug and kept out of the light as much as possible.

Varieties.—The American Wonder and White Rose varieties are most commonly used when two crops are grown in one season. The former is produced throughout the Sacramento and San Joaquin valleys, and southern California. The latter is used chiefly in the southern part of the state.

SUMMARY

The production of a second or fall crop of potatoes in many sections of California should be encouraged.

Potatoes ripening in the fall will keep much longer than those maturing during the spring or summer.

It is preferable to use the potatoes maturing in the spring for seed from which to grow the fall crop.

A second crop of potatoes should be grown only where the soil is adapted to its needs and where adequate irrigation is available.

It is often difficult to procure a satisfactory stand of plants when planting during the extreme heat. This may be largely overcome by curing the seed properly, and irrigating twice just previous to planting.

In central California, the seed should be planted between July 7 and August 1; in southern California from July 1 to August 10.

Under ordinary conditions the crop will be ready to harvest during November, but should not be dug until the plants have fully matured.